

# **Restoring watershed-scale processes and wetland-riparian resources on the Flathead Indian Reservation**

***The Governor's Restoration Forum – Enhancing  
Restoration's Workforce, Science, and Technology  
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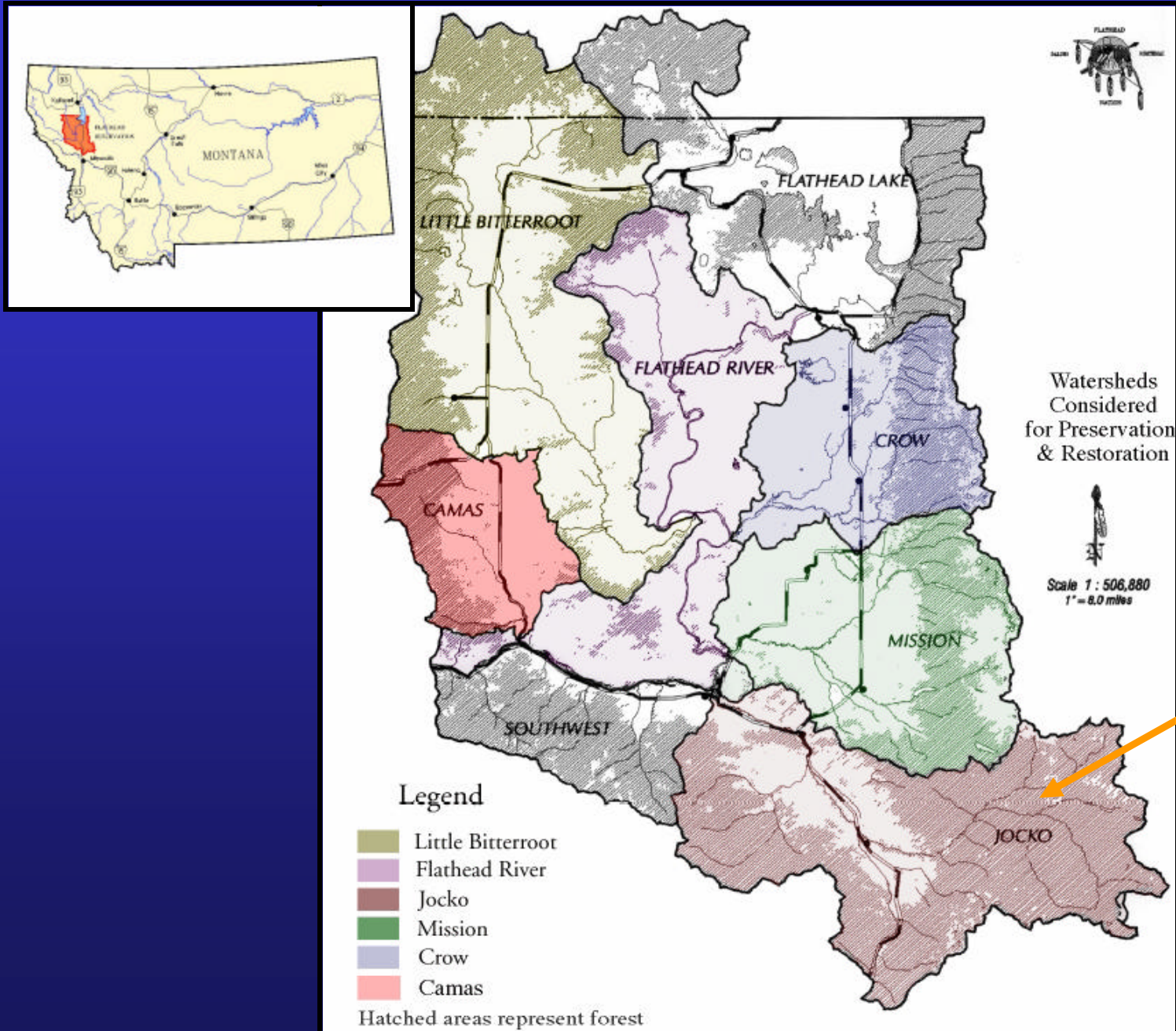
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# Jocko Watershed Restoration Effort



**Jocko  
Drainage**

# The Tribes Watershed Restoration Approach

- Interdisciplinary and Team Oriented
- Rely on a mix of in-house technical staff, technical consultants, earthwork and revegetation contractors, land appraisers/realtors
- Each individual effort is completed within the context of a Master Plan Document
- For each singular effort project lead drawn from team
- Flexible and Adaptable

# Restoration Objectives - Processes

Understand, promote, and restore physical and ecological processes. We try to set the stage so that watershed processes maintain a dynamic riverine environment



# Restoration Objectives – Processes Opportunities

- Montana contains some of the key reference ecosystems where measureable characteristics / habitat can be linked to formative processes
  - Understand and measure physical / ecological processes
  - Identify current and needed restoration tools to restore and promote key processes
  - Telescoping science down to applied science to restoration implementation



# Restoration Objectives – Processes

## Hurdles

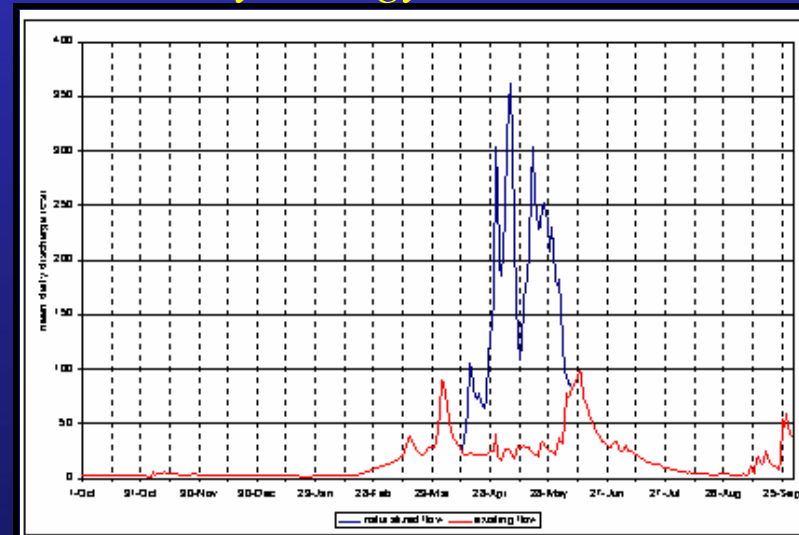
How can we achieve this restoration objective in the cultural, or built environment

*Lost floodplain connectivity*



*Exotic Species*

*Altered hydrology*



*Development Pressures*

## Restoration Objectives - Scale

- Complete restoration at a scale that will maintain lateral and longitudinal interconnectivity to support watershed-scale physical and ecological processes
- Think of interconnectivity broadly – tie the Community to the Resource

# Restoration Objectives – Scale Opportunities

- Appropriate restoration scale informed by science
- With a broad enough physical and community scale we expand restoration resources and opportunities





# Restoration Objectives – Scale

## Hurdles

- Legacy and development pressures
- Putting a collective picture together at an appropriate scale, watershed - scale
- Bridging the gap between technical and community perspectives



# Restoration Objectives – Human Interactions

Create a riverine environment where there is appropriate interaction with, and use of the Jocko River corridor – specifically we are trying to create a continuous corridor from the Flathead River to the mountains where traditional and new travel and use can occur

*Appropriate interaction and use is that which sustains processes and interconnectivity*

# Restoration Objectives –Interactions Opportunities

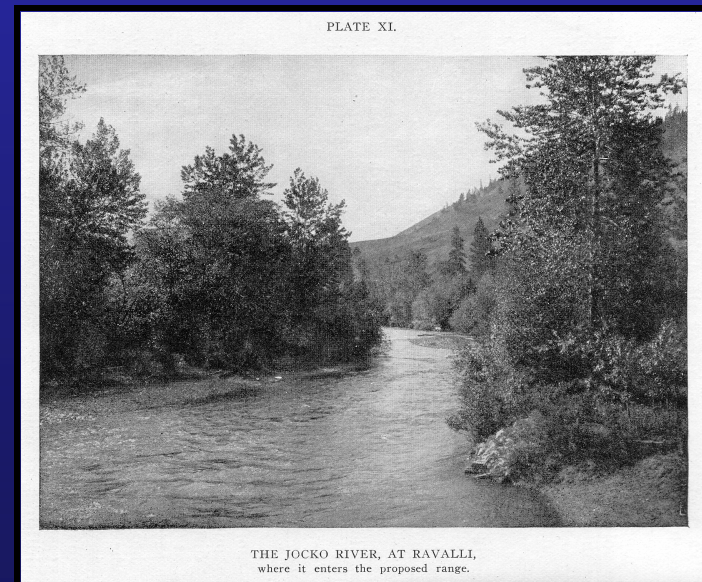
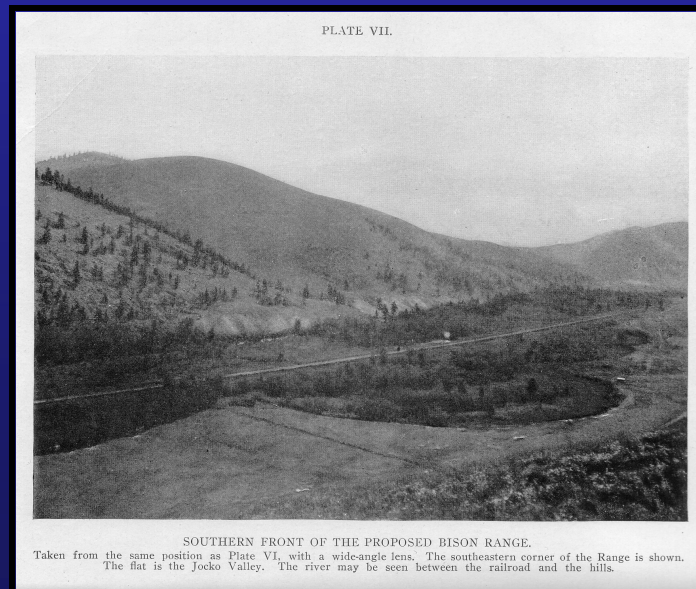
- Community focal point and development
- Educational outreach



# Restoration Objectives –Interactions Hurdles

Legitimate existing use and reliance on watershed  
resources

Perception of a riverine ecosystem





# From Objectives to Detail

## Active Restoration





# From Objectives to Detail

## Active Restoration

Conceptual plan – restore processes	Science Based, <i>drawing from research</i>
Design/Permitting	Applied Science, Engineering <i>drawing from restoration toolbox</i>
Construction and Revegetation	Technical oversight, Contractor(s) <i>distribute the economy</i>
Monitoring	Applied Science <i>renew the learning experience (adaptive management)</i>
Maintenance	Contractor(s)

# From Objectives to Detail

## Active Restoration

One of the lessons learned



# From Objectives to Detail

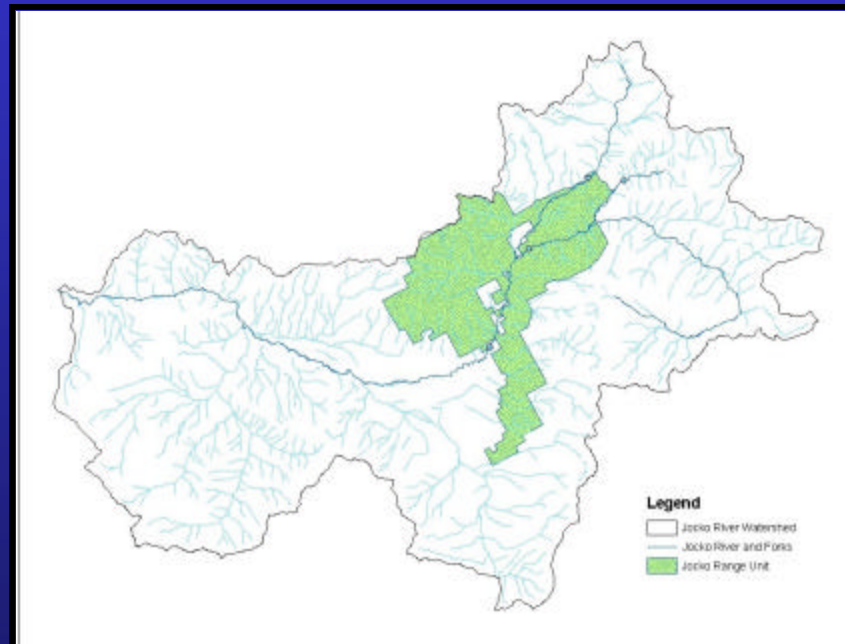
## Passive Restoration / Shift Land Uses

- The Tribes, through the restoration program, have purchased over 7 miles of river channel and floodplain habitat in the Jocko Drainage and redirected those lands to conservation
- Internally using their own lands, the Tribes have taken over 1,800 acres of agricultural leases with stream channel, wetland, or floodplain resources and redirected the agricultural use to uplands purchased as part of the conservation acquisitions

# From Objectives to Detail

## Passive Restoration / Shift Land Uses

Through a Community effort, facilitated by the restoration program, the Tribes have retired ~ 30,000 acres of Range Unit fronting over 12 miles of the river and moved the range use to a large restoration fund upland purchase



# From Objectives to Detail

## Passive Restoration / Shift Land Uses

Land Purchase Criteria – ranked based on ecological values on parcel	Science to applied science
Negotiation/Purchase	Appraisers, Realtors
Interim Management Plan	Applied Science
Monitoring	Applied Science
Maintenance	Labor Crews
Potential Loop to Active Restoration	



# Summary Thoughts

- Process driven restoration where science informs restoration implementation
- We need to operate at meaningful scales that will achieve the intent of restoration
- We need to operate in the built or cultural environment and find ways to implement meaningful projects